IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant:	David L. Chalupsky et al.	Examiner: Brian P. Whipple
Serial No.:	10/656,652	Group Art Unit: 2152
Filed:	September 4, 2003	Docket No.: P14969
		Confirmation No. : 8297
Title:	METHOD, SYSTEM, AND PROGRAM FOR MANAGING A SPEED AT WHICH DATA IS TRANSMITTED BETWEEN NETWORK ADAPTORS	

APPEAL BRIEF

To: Mail Stop Appeal Brief-Patents

Commissioner for Patents

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In response to the Notification of Non-Compliant Appeal Brief mailed May 28, 2008, please enter this appeal brief. More specifically, this Appeal Brief is submitted in response to the final rejection of the claims mailed September 24, 2007. A Notice of Appeal was filed on December 26, 2007, together with a pre-brief conference request. A notice of panel decision from pre-appeal brief review was mailed February 15, 2008.

REAL PARTY IN INTEREST

The assignee of the entire right, title, and interest in the patent application is Intel Corporation.

RELATED APPEALS AND INTERFERENCES

There are currently no related appeals of other United States patent applications known to Appellants, Appellants' legal representative, or the assignee that will directly affect, or be directly affected by, or have a bearing on, the Board's decision. There are currently no related interferences known to Appellants, Appellants' legal representative, or the assignee which will directly affect, or be directly affected by, or have a bearing on, the Board's decision.

<u>**STATUS OF CLAIMS**</u>

Claims 1-52 are pending in the application. Following the final Office Action mailed September 24, 2007, the status of the claims is as follows:

Claims 1-2, 4-12, 14-19, 21-24, 26-34, 36, 38-39, 41-42, 44-45, and 47-51 stand rejected under 35 USC §102(e) as being anticipated by Robert et al. (U.S. Publication No. 20040003296; "Robert" hereinafter).

Claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52 stand rejected under 35 USC § 103(a) as being unpatentable over Robert in view of Murase et al. (U.S. Patent No. 6,298,042, "Murase" hereinafter)

Claims 1-52 are being appealed.

STATUS OF AMENDMENTS

No further amendment has been made to the claims since the mailing of the Final Office Action.

SUMMARY OF CLAIMED SUBJECT MATTER

The subject matter of the independent claims is summarized below with reference numerals and reference to the specification and drawings in accordance with 37 C.F.R. §41.37.

Claim 1

Claim 1 is directed at a method which selectively determines a new transmission speed in response to a speed change event (e.g., reference numerals 100 and 102 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 1-4) and transmits a speed change request (e.g., reference numeral 72 in Fig. 3; page 6, line 2) and the new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) to a linked network device (e.g., reference numeral 2b/10b in Fig. 1; page 6, line 5) to request a local (e.g., reference numeral 2a/10a in Fig. 1; page 6, line 2) and the linked network devices to communicate at the new transmission speed (e.g., item 106 in Fig 5; page 6, line 7-17).

Moreover, the new transmission speed is claimed to be different from a current transmission speed between the local network device and the linked network device (e.g., page 7, lines 20-22).

Also, the transmitting occurs while maintaining a linked exchange between the local and linked network devices (e.g., page 9, lines 16-17).

Claim 14 is directed at a network device (e.g., item 2a in Fig. 1) which includes logic (e.g., reference numeral 10a in Fig. 1; page 6, line 2) to initiate an operation to change a current transmission speed at which data is transmitted to a linked network device (e.g., reference numeral 10b in Fig. 1; page 6, line 5) in response to a speed change event (e.g., reference numerals 100 and 102 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 1-4).

The network device may also include logic to determine a new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) different from a current transmission speed (e.g., page 7, lines 20-22) between the network device and the linked network device. Additionally, the network device may include logic to transmit a speed change request (e.g., reference numeral 72 in Fig. 3; page 6, line 2) and the new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) to the linked network device to request the linked network device to communicate at the new transmission speed.

Moreover, the transmission occurs while maintaining a linked exchange between the network device and the linked network device (e.g., page 9, lines 16-17).

Claim 21 is directed at a computer system (e.g., item 2a in Fig. 1; page 3, lines 4-5) capable of communicating over a network (e.g., item 16 in Fig. 1; page 3, lines 22-23) with a device (e.g., item 2b; page 3, lines 4-5) including a linked network device (e.g., item 10b in Fig. 1; page 3, lines 4-5).

The computer system may include a processing unit (item 4a in Fig. 1; page 3, lines 4-5), a storage device (item 6a in Fig. 1; page 3, lines 4-5), and a storage controller (e.g., page 3, line 13, or page 11, line 24) to manage Input/Output (I/O) access to the storage device.

The computer system may additionally include a network device (e.g., item 10a in Fig. 1; page 6, line 2) capable of receiving data from the processing unit and communicating with the linked network device over the network

The network device may include logic (e.g., reference numeral 10a in Fig. 1; page 6, line 2) to initiate an operation to change a current transmission speed at which data is transmitted to the linked network device (e.g., reference numeral 10b in Fig. 1; page 6, line 5) in response to a speed change event (e.g., reference numerals 100 and 102 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 1-4). The network device may further include logic to determine a new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) different from a current transmission speed (e.g., page 7, lines 20-22) between the network device and the linked network device. Additionally, the network device may include logic to transmit a speed change request (e.g., reference numeral 72 in Fig. 3; page 6, line 2) and the new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) to the linked network device to request the linked network device to communicate at the new transmission speed.

Moreover, the transmission occurs while maintaining a linked exchange between the network device and the linked network device (e.g., page 9, lines 16-17).

Claim 23 is directed at a storage device (such as item 6a in Fig. 1) to store code (e.g., items 18a in Fig. 1; page 7, lines 27-28) capable of causing operations in a local network device (e.g., reference numeral 10a in Fig. 1; page 6, line 2). The operations in turn selectively determine a new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) different from a current transmission speed (e.g., page 7, lines 20-22).

The operations may further transmit a speed change request (e.g., reference numeral 72 in Fig. 3; page 6, line 2) and the new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) to a linked network device (e.g., reference numeral 10b in Fig. 1; page 6, line 5) to request the local (e.g., reference numeral 10a in Fig. 1; page 6, line 2) and the linked network devices to communicate at the new transmission speed (e.g., item 106 in Fig 5; page 6, line 7-17).

Also, the transmitting occurs while maintaining a linked exchange between the local and linked network devices (e.g., page 9, lines 16-17).

Claim 48

Claim 48 is directed at a system (e.g., Fig. 1; page 3, line 1) including a linked device (e.g., item 2b/10b in Fig. 1; page 3, lines 4-5) and a local device (e.g., item 2a/10a in Fig. 1; page 6, line 2).

The local device may include logic (e.g., reference numeral 10a in Fig. 1; page 6, line 2) to initiate an operation to change a current transmission speed at which data is transmitted to the linked device (e.g., reference numeral 10b in Fig. 1; page 6, line 5) in response to a speed change event (e.g., reference numerals 100 and 102 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 1-4).

The local device may also include logic to determine a new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) different from a current transmission speed (e.g., page 7, lines 20-22) between the local device and the linked device. Additionally, the local device may include logic to transmit a speed change request (e.g., reference numeral 72 in Fig. 3; page 6, line 2) and the new transmission speed (e.g., reference numeral 104 in Fig. 4 and reference numeral 74 in Fig. 3; page 6, lines 3-5) to the linked device to request the linked device to communicate at the new transmission speed.

Moreover, the transmission occurs while maintaining a linked exchange between the local device and the linked device (e.g., page 9, lines 16-17).

GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

I.   Whether claims 1-2, 4-12, 14-19, 21-24, 26-34, 36, 38-39, 41-42, 44-45, and 47-51 are anticipated under 35 USC §102(e) by Robert.

II.   Whether claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52 are obvious under 35 USC § 103(a) over Robert in view of Murase.

ARGUMENT

I.   Rejections Under 35 U.S.C. §102

    A.   Legal Standard for Anticipation

       The standard for lack of novelty, that is, for "anticipation," under 35 U.S.C. §102 is one of strict identity. To anticipate a claim for a patent, a single prior source must contain all its essential elements. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 90 (Fed. Cir. 1986). Invalidity for anticipation requires that all of the elements and limitations of the claims be found within a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 USPQ2d 1001 (Fed. Cir. 1991). Every element of the claimed invention must be literally present, arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (finding that the jury had been erroneously instructed that anticipation may be shown by equivalents, a legal theory that is pertinent to obviousness under Section 103, not to anticipation under Section 102). "The identical invention must be shown in as complete detail as is contained in the patent claim." MPEP §2131 (7th Ed. 1998) (citing *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). Furthermore, functional language, preambles, and language in "whereby," "thereby," and "adapted to" clauses cannot be disregarded. *Pac-Tec, Inc. v. Amerace Corp.*, 14 USPQ2d 1871 (Fed. Cir. 1990).

       "It is by now well settled that the burden of establishing a *prima facie* case of anticipation resides with the Patent and Trademark Office." *Ex parte Skinner*, 2 USPQ2d 1788, 1788-1789 (Bd. Pat. Int. 1986) (holding that examiner failed to establish *prima facie* case of anticipation). The examiner has "the burden of proof . . . to produce the factual basis for its rejection of an application under sections 102 or 103." *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984) (quoting *In re Warner*, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967)). Only if that burden is met, does the burden of going forward shift to the applicant.

Claims 1-2, 4-12, 14-19, 21-24, 26-34, 36, 38-39, 41-42, 44-45, and 47-51 stand rejected under 35 U.S.C. §102(e) as being anticipated by Robert. Each of these rejections is respectfully traversed since the cited art fails to teach or suggest the claimed combination of features such as set forth in any of claims1-2, 4-12, 14-19, 21-24, 26-34, 36, 38-39, 41-42, 44-45, and 47-51.

1.   Independent Claims 1, 14, 21, 23, and 48

Initially, it is respectfully submitted that the Examiner has failed to establish a prima facie case for anticipation of claim 1. In particular, the final Action fails to establish a prima facie case that Robert anticipates independent claim 1. Anticipation under 35 U.S.C. §102 requires that each and every element of the claim be set forth in the manner recited in the claim in a single prior art reference. (See, MEPP 2131).

More particularly, in rejecting claim 1 over Robert, the Examiner states on page 2, line 14, through page 3, line 2, of the final Office Action mailed September 24, 2007, that:

> 5.   Applicant argues Robert fails to teach selective determination. Examiner
> respectfully disagrees. Robert discloses the physical layer transceiver "configured to
> select, in order of descending priority, 100Base-TX, full duplex, 100Base-TX, half
> duplex, 10BaseT, full duplex, or 10BaseT, half duplex" ([0019], ln. 1-7), where the
> physical layer transceiver and a corresponding link partner are determining the rate of
> transmission through such a selection ([0019], ln. 1-7).

However, Applicant has not merely argued that Robert fails to teach "selective determination." See, e.g., previous response filed September 7, 2007, at page 14, lines 3-7, where Applicant states that:

> **As can be readily seen, the cited portion of Robert fails to teach (or even suggest) the claimed combination of features such as set forth in claim 1 including "<u>selectively determining</u> a new transmission speed different from a current transmission speed between a local network device and a linked network device <u>in response to a speed change event</u>." For example, Robert fails to teach any selective**

determination whether or not it is in response to a speed change event.

In fact, the cited portion of Robert by the Examiner merely states that:

> [0019] The PHY 16 typically is configured for performing autonegotiation with a link partner, where the PHY 16 and the corresponding link partner determine the highest data rate for transmission; for example, during autonegotiation the PHY 16 may be configured to select, in order of descending priority, 100Base-TX, full duplex, 100Base-TX, half duplex, 10BaseT, full duplex, or 10BaseT, half duplex.

As can be seen, Robert at least fails to teach (or even suggest) "selectively determining … in response to a speed change event."

The Examiner goes on to state that (final Office Action, page 4, lines 3-10):

> Additionally, Applicant argues Robert fails to disclose transmitting a speed change request and the new transmission speed to the linked network device or maintaining a linked exchange. Examiner respectfully disagrees. The transmission of a speed change request and the new transmission speed have been disclosed by Robert as discussed in the preceding paragraph (see Abstract, ln. 6-10; [0023], ln. 1-3; [0024], ln. 1-5). Furthermore, the link exchange inherently is maintained as Robert discloses autonegotiation between link partners ([0023], ln. 3-10), which is an exchange across a link.

However, the Examiner has failed to indicate how Robert anticipates the claimed transmission of a new transmission speed. In previous sections discussed above, the Examiner appears to indicate that Robert only transmits a "power down request" and not the claimed "new transmission speed." Hence, a case for prima facie rejection has clearly not been made by the Examiner.

Furthermore, Applicant respectfully disagrees that the link exchange inherently is maintained. In particular, Applicant asserts that the record fails to provide any factual support for a finding of teaching by inherency. To prove inherency, the Examiner must establish that the

Robert underlinenecessarily includes the limitation regarding transmission "while maintaining a linked exchange between the local and linked network devices" recited in the claims. *Continental Can Co. U.S.A. v. Monsanto Co., 948 F.2d 1264, 1268 (Fed. Cir. 1991)*. There is simply no such showing on the record.

In fact, Robert teaches away from maintaining a linked exchange because step 34 specifically indicates that autonegotiation (which the Examiner equates to the linked exchange as indicated in the above cited portion) is to be restarted. *See, e.g., Figure 2 of Robert*. It is respectfully submitted that restarting the autonegotiation directly counters the claimed combination of features set forth in claim 1, e.g., including "wherein the transmitting occurs while maintaining a linked exchange between the local and linked network devices."

Accordingly, it is respectfully submitted that claim 1 is in condition for allowance.

All remaining independent claims 14, 21, 23, and 48 have been rejected for similar reasons as claim 1 (see, outstanding Office Action, page 10, lines 5-6) and these claims which recite similar (though not identical) language should be allowable for at least similar reasons as claim 1.

These same issues were raised through a pre-appeal conference request filed on December 26, 2007, to avoid the need for an appeal; however, that panel summarily dismissed the request, indicating that Applicant should proceed to the Board.

2.   *Remaining Claims Rejected under 35 USC §102*

All pending dependent claims including claims 2, 4-12, 15-19, 22, 24, 26-34, 36, 38-39, 41-42, 44-45, 47, 49-51 should be allowable for at least similar reasons as their respective independent claims, as well as additional or alternative elements that are recited therein but not shown in the cited prior art.

For example with reference to claim 2, the Examiner states that:

14.   As to claim 2, Robert discloses transmitting the speed change request comprises including the speed change request and the new transmission speed in a data packet being transmitted to the linked network device at the current transmission speed ([0023], ln. 1-3; [0024] – [0025]; [0026], ln. 1-5).

However, the cited portion of Robert fails to even mention the word "packet" or that a packet is to include "the speed change request and the new transmission speed" in the data packet "being transmitted to the linked network device at the current transmission speed." Hence, claim 2 (and claim 24 which is rejected based on the same reasoning) is in condition for allowance for at least these further reasons.

Similarly, in rejecting claim 5, the Examiner states that:

16.   As to claim 5, Robert discloses the local and linked network devices continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment ([0023]).

However, nothing in [0023] of Robert teaches (or even suggests) that "the local and linked network devices continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment." The only mention of any transmission in [0023] appears to be in the last line stating that the response is output to "the operating system," and not any other linked device such as set forth in claim 5 or anything about continuing transmission "until the linked network device returns a positive acknowledgement." Hence, claim 5 (and claims 16 and 27 which are rejected based on the same reasoning) is in condition for allowance for at least these further reasons.

Similar arguments may be made with respect to the other dependent claims rejected under 35 U.S.C. §102. As best as the Applicant can guess, it appears that the Examiner is rejecting some of the claims (such as those discussed above) by inherency. However, pursuant to

MPEP §2112, it is respectfully submitted that the record fails to provide any factual support for a finding of teaching by inherency. In particular, MPEP §2112 in part states that:

> **The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities.**

The Examiner has simply failed to meet the burdens for showing inherency.

II.   *Rejections Under 35 U.S.C. §103*

    A.   *Legal Standard for Obviousness*

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest *all* the claim limitations. (*See, e.g., MPEP 2143*). To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Moreover, the Examiner bears the burden of proof to provide a factual basis to support a rejection under 35 U.S.C. §103. *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984) (quoting *In re Warner*, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967)). Only if that burden is met, does the burden of going forward shift to the applicant.

    B.   *Robert, Alone or in Combination with Murase, Fails to Disclose or Suggest Limitations Recited in the Claims Rejected Under 35 U.S.C. §103(a)*

Claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52 stand rejected under 35 U.S.C. §103(a) as being obvious over Robert in view of Murase. Each of these rejections is respectfully traversed since the cited art, alone or in combination, fails to teach or suggest the claimed combination of features such as set forth in any of claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52.

Initially, it is respectfully submitted that he Examiner has failed to establish a prima facie case for obviousness of claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52, in part, because the Examiner has failed the third prong identified by MPEP §2143.

In particular, as discussed with reference to claim 1 above, Robert fails to teach or even suggest the claimed combination of features such as set forth in the pending independent claims, or the dependent claims. Moreover, the Examiner admits in the final Office Action, pages 12-13,

that Robert fails to teach the recitation of claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52. However, even if Robert and Murase were to be combined, the combination still fails to reach the claimed combination of features such as set forth in claims 3, 13, 20, 25, 35, 37, 40, 43, 46, and 52. , in part, because the Examiner has failed the third prong identified by MPEP §2143.

Hence the rejections under 35 U.S.C. §103 are unsupported.

CONCLUSIONS

The cited references fail to disclose or suggest limitations of appellants' claims. Therefore, the cited references, alone or in combination, cannot be used to establish the required *prima-facie* case of anticipation or obviousness. Therefore, Appellant urges the Board to reverse the examiner's rejections of the pending claims.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-4238.

Respectfully submitted,

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Claims Appendix

1.   A method comprising:

selectively determining a new transmission speed different from a current transmission speed between a local network device and a linked network device in response to a speed change event; and

transmitting a speed change request and the new transmission speed to the linked network device to request the local and linked network devices to communicate at the new transmission speed, wherein the transmitting occurs while maintaining a linked exchange between the local and linked network devices.

2.   The method of claim 1, wherein transmitting the speed change request comprises including the speed change request and the new transmission speed in a data packet being transmitted to the linked network device at the current transmission speed.

3.   The method of claim 1, wherein transmitting the speed change request comprises including the speed change request and the new transmission speed in a preamble packet that is transmitted at the beginning of data packets or in an idle transmission between packets to synchronize data transmissions at the current transmission speed.

4.   The method of claim 1, wherein the linked network device in response to the speed change request returns positive acknowledgment to the local network device if the linked network device is capable of transmitting at the new transmission speed.

5.   The method of claim 4, wherein the local and linked network devices continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment.

6.   The method of claim 1, wherein the linked network device in response to the

speed change request returns negative acknowledgment to the local network device if the linked network device is not capable of transmitting at the new transmission speed.

7. The method of claim 1, wherein the operation to change the transmission speed comprises an operation to either:

increase the transmission speed if the local network device is capable of transmitting at a transmission speed that is higher than the current transmission speed; or

decrease the transmission speed if the local network device is capable of transmitting at a transmission speed that is lower than the current transmission speed.

8. The method of claim 1, further comprising:
maintaining transmission information indicating transmission capabilities of the linked network device, wherein the determined new transmission speed is a new transmission speed that the transmission information indicates that the linked network device is capable of performing.

9. The method of claim 1, further comprising setting a register in the local network device to indicate the new transmission speed, wherein a device driver used to communicate with the local network device determines the new transmission speed, wherein setting the register in the local network device comprises the device driver changing advertised capabilities of the local network device indicated in the register, and wherein transmitting the speed change request comprises restarting an auto-negotiation process that selects a common transmission speed based on the changed advertised capabilities in the local network device.

10. The method of claim 9, wherein the determined new transmission speed is higher than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are less than the determined new transmission speed.

11. The method of claim 9, wherein the determined new transmission speed is

lower than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are higher than the determined new transmission speed.

12. The method of claim 1, wherein the speed change event comprises an application program determining an anticipated increase of data transmissions through the local network device, and wherein the new transmission speed is higher than the current transmission speed.

13. The method of claim 1, wherein the speed change event is based on a detected change in network traffic at the local network device.

14. A network device comprising:

(i) logic to initiate an operation to change a current transmission speed at which data is transmitted to a linked network device in response to a speed change event;

(ii) logic to determine a new transmission speed different from a current transmission speed between the network device and the linked network device; and

(iii) logic to transmit a speed change request and the new transmission speed to the linked network device to request the linked network device to communicate at the new transmission speed, wherein the transmission occurs while maintaining a linked exchange between the network device and the linked network device.

15. The network device of claim 14, wherein the linked network device in response to the speed change request, returns positive acknowledgment to the network device if the linked network device is capable of transmitting at the new transmission speed.

16. The network device of claim 15, wherein the network device and the linked network device continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment.

17.   The network device of claim 14, wherein the linked network device in response to the speed change request, returns negative acknowledgment to the network device if the linked network device is not capable of transmitting at the new transmission speed.

18.   The network device of claim 14, further comprising logic to:

increase the transmission speed if the network device is capable of transmitting at a transmission speed that is higher than the current transmission speed; or

decrease the transmission speed if the network device is capable of transmitting at a transmission speed that is lower than the current transmission speed.

19.   The network device of claim 14, further comprising logic to maintain transmission information indicating transmission capabilities of the linked network device, wherein the determined new transmission speed is a new transmission speed that the transmission information indicates that the linked network device is capable of performing.

20.   The network device of claim 14, wherein the speed change event is based on a detected change in network traffic at the network device.

21.   A computer system capable of communicating over a network with a device including a linked network device, comprising:

a processing unit;

a storage device;

a storage controller to manage Input/Output (I/O) access to the storage device;

a network device capable of receiving data from the processing unit and communicating with the linked network device over the network, the network device comprising:

(a) logic to initiate an operation to change a current transmission speed at which data is transmitted to the linked network device in response to a speed change

event;

(b) logic to determine a new transmission speed different from the current transmission speed; and

(c) logic to transmit a speed change request and the new transmission speed to the linked network device to request the linked network device to communicate at the new transmission speed, wherein the transmission occurs while maintaining a linked exchange between the network device and the linked network device.

22.   The computer system of claim 21, wherein the network device further comprises:

logic to set a register to indicate the new transmission speed and wherein the computer system further comprises logic to communicate with the network device to determine the new transmission speed, wherein the logic to set the register comprises logic to change advertised capabilities of the network device indicated in the register, and wherein the logic to transmit the speed change request comprises logic to restart an auto-negotiation process that selects a common transmission speed based on the changed advertised capabilities in the network device.

23.   A storage device to store code capable of causing operations in a local network device, the operations comprising:

determining a new transmission speed different from a current transmission speed; and

transmitting a speed change request and the new transmission speed to the linked network device to request the local and linked network devices to communicate at the new transmission speed, wherein the transmitting occurs while maintaining a linked exchange between the local and linked network devices.

24.   The storage device of claim 23, wherein the code causes the local network device to include the speed change request and the new transmission speed in a data packet being

transmitted to the linked network device at the current transmission speed.

25.   The storage device of claim 23, wherein the code causes the local network device to include the speed change request and the new transmission speed in a preamble packet that is transmitted to the linked network device at the beginning of data packets or in an idle transmission between packets to synchronize data transmissions at the current transmission speed.

26.   The storage device of claim 23, wherein the linked network device is to return, in response to the speed change request, positive acknowledgment to the local network device if the linked network device is capable of transmitting at the new transmission speed.

27.   The storage device of claim 26, wherein the code causes the local and linked network devices to continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment.

28.   The storage device of claim 23, wherein the linked network device is to return negative acknowledgment to the local network device, in response to the speed change request, if the linked network device is not capable of transmitting at the new transmission speed.

29.   The storage device of claim 23, wherein the code causes the local network device to either:

increase the transmission speed if the local network device is capable of transmitting at a transmission speed that is higher than the current transmission speed; or

decrease the transmission speed if the local network device is capable of transmitting at a transmission speed that is lower than the current transmission speed.

30.   The storage device of claim 23, wherein the code causes the local network device to:

maintain transmission information indicating transmission capabilities of the linked network device, wherein the determined new transmission speed is a new transmission speed that the transmission information indicates that the linked network device is capable of performing.

31.   The storage device of claim 23, further comprising code capable of causing the local network device to set a register in the local network device to indicate the new transmission speed and wherein the code comprises a device driver to communicate with the local network device to determine the new transmission speed, wherein to set the register in the local network device comprises the device driver changing advertised capabilities of the local network device indicated in the register, and wherein transmitting the speed change request comprises restarting an auto-negotiation process that selects a common transmission speed based on the changed advertised capabilities in the local network device.

32.   The storage device of claim 31, wherein the determined new transmission speed is higher than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are less than the determined new transmission speed.

33.   The storage device of claim 31, wherein the determined new transmission speed is lower than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are higher than the determined new transmission speed.

34.   The storage device of claim 23, wherein the speed change event comprises an application program determining an anticipated increase of data transmissions through the local network device, and wherein the new transmission speed is higher than the current transmission speed.

35.   The storage device of claim 23, wherein the speed change event comprises

detecting a change in network traffic at the local network device.

36.   The method of claim 1, wherein the speed change event is based on a change in desired power consumption.

37.   The method of claim 1, wherein the speed change event is based on a detected change in network conditions.

38.   The method of claim 1, wherein the local and linked network devices interact based on the speed change request at the current transmission speed.

39.   The network device of claim 14, wherein the speed change event is based on a change in desired power consumption.

40.   The network device of claim 14, wherein the speed change event is based on a detected change in network conditions.

41.   The network device of claim 14, wherein the network device and the linked network device interact based on the speed change request at the current transmission speed.

42.   The computer system of claim 21, wherein the speed change event is based on a change in desired power consumption.

43.   The computer system of claim 21, wherein the speed change event is based on a detected change in network conditions.

44.   The computer system of claim 21, wherein the network device and the linked network device interact based on the speed change request at the current transmission speed.

45.   The article of manufacture of claim 23, wherein the speed change event is based on a change in desired power consumption.

46.   The article of manufacture of claim 23, wherein the speed change event is based on a detected change in network conditions.

47.   The article of manufacture of claim 23, wherein the local and linked network devices interact based on the speed change request at the current transmission speed.

48.   A system comprising:
a linked device; and
a local device comprising:

logic to initiate an operation to change a current transmission speed at which data is transmitted to the linked device in response to a speed change event,

logic to determine a new transmission speed different from a current transmission speed between the local device and the linked device, and

logic to transmit a speed change request and the new transmission speed to the linked device to request the linked device to communicate at the new transmission speed, wherein the transmission occurs while maintaining a linked exchange between the local device and the linked device.

49.   The system of claim 48, wherein the local and linked network devices interact based on the speed change request at the current transmission speed.

50.   The system of claim 48, wherein the transmission occurs at the current transmission speed.

51.   The system of claim 48, wherein the speed change event is based on a change in desired power consumption.

52.   The system of claim 48, wherein the speed change event is based on a detected change in network conditions.

Evidence Appendix

None

Related Proceedings Appendix

None